

# *TKA in varus Knee*

**Lyon DIU 2017**



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The authors of the next presentation have identified potential conflicts of interest:  
Amplitude/ Tornier-Corin



This banner features several logos and text. On the left, it says 'LYON GENOU' in blue, uppercase letters. To its right is a stylized blue and green 'G' logo. Further right is the 'CENTRE ALBERT TRILLAT' logo, which includes a green and blue graphic. On the far right is the 'LYON KNEE SCHOOL OF SURGERY' logo, featuring a blue and green graphic. Below these logos is a blue horizontal bar with the text 'UNIVERSITY TEACHING CENTER' in white, uppercase letters. At the bottom of the banner are three circular logos: 'EFORT' (European Federation of Orthopedic Surgeons), 'INTERNATIONAL SOCIETY OF ARTHROSCOPY, KNEE SURGERY &amp; ORTHOPEDIC SPORTS MEDICINE' (IANKS), and 'ESSKA' (European Society for Surgical Knee Endoscopy).



# Clinical case



Number 1

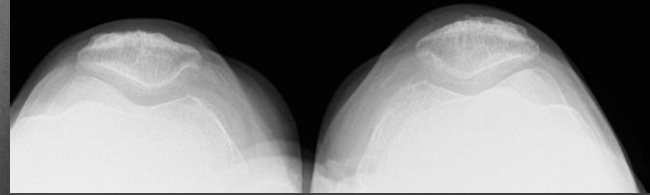
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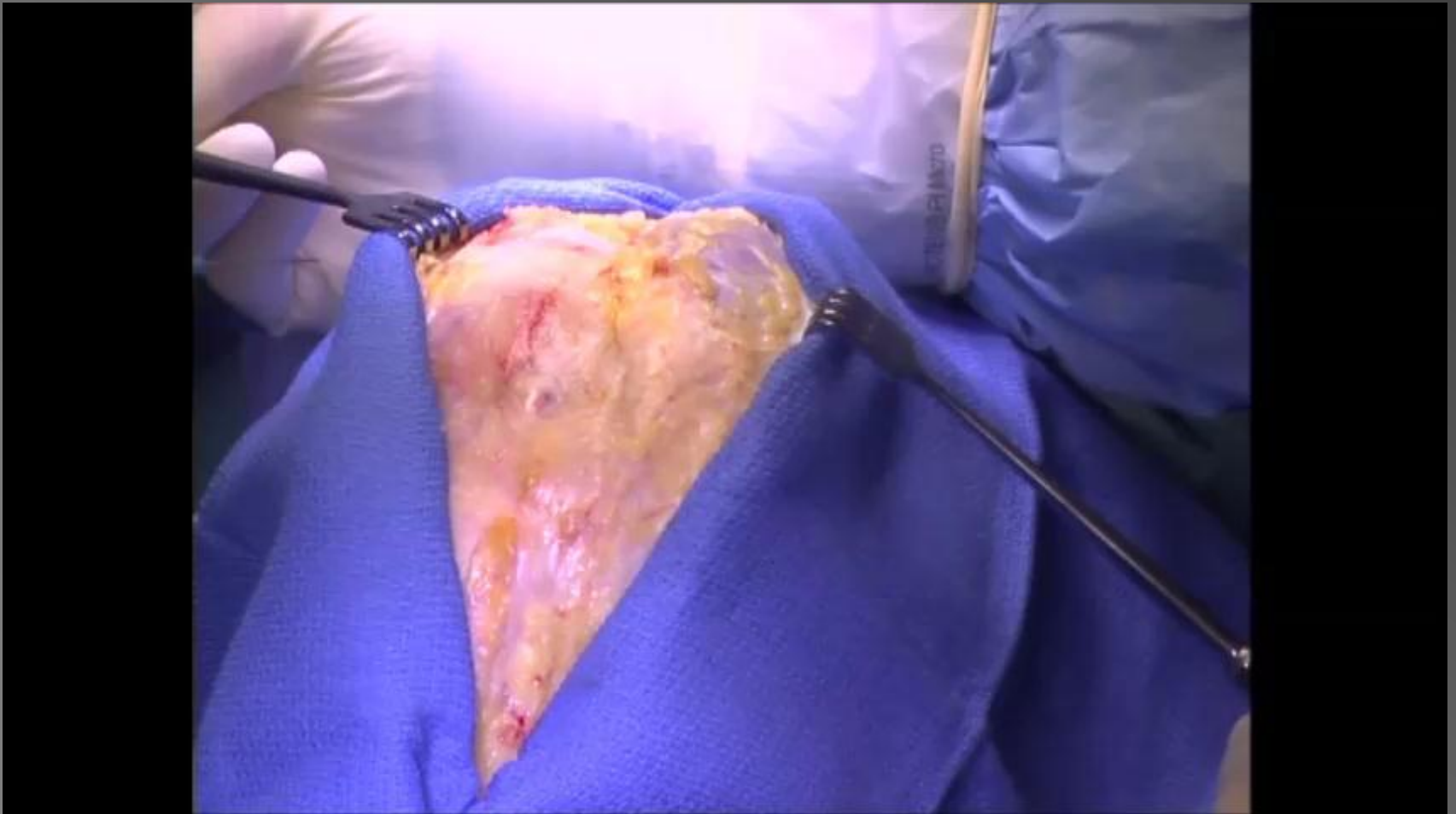




# Exposure

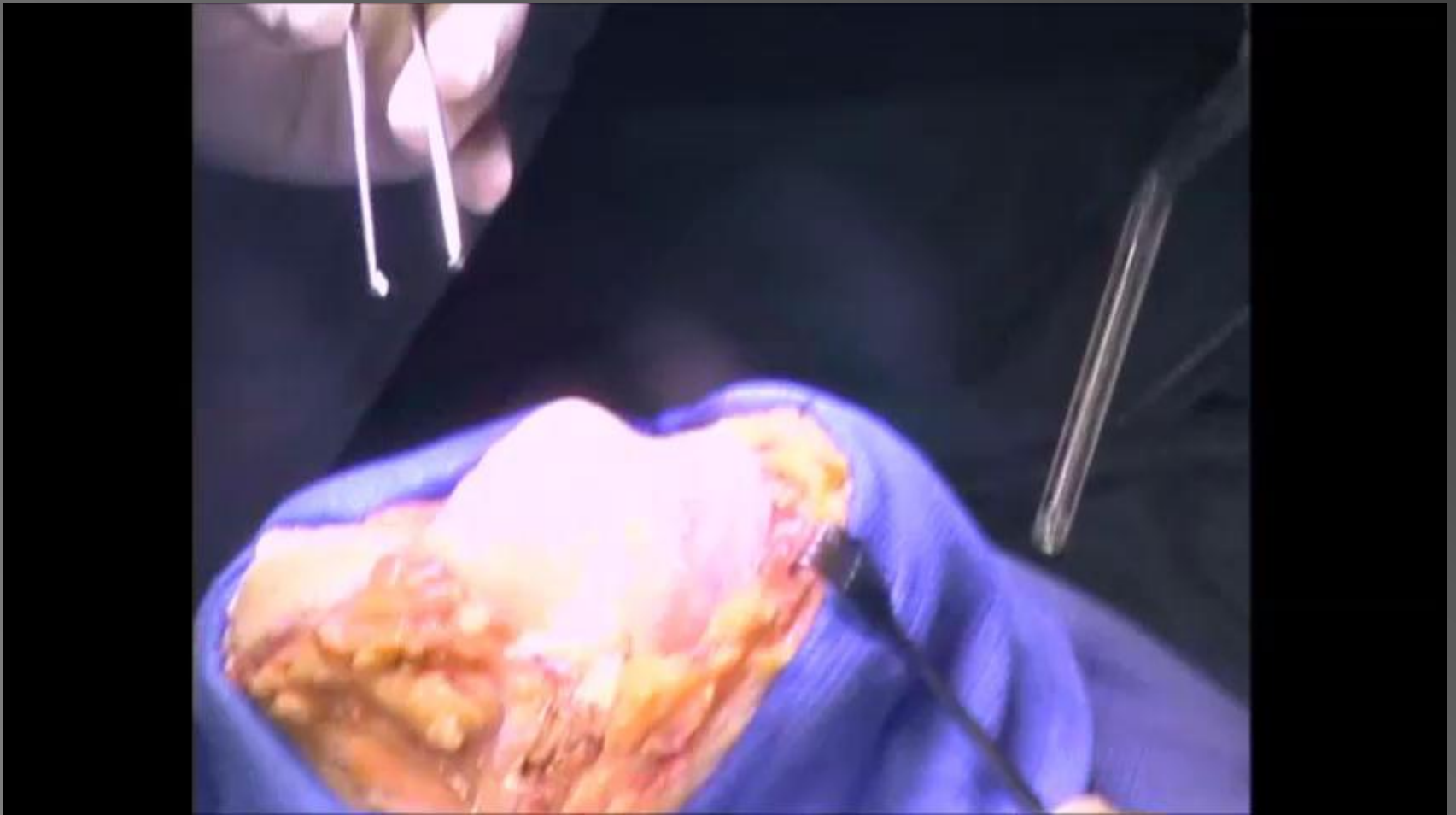


# Exposure





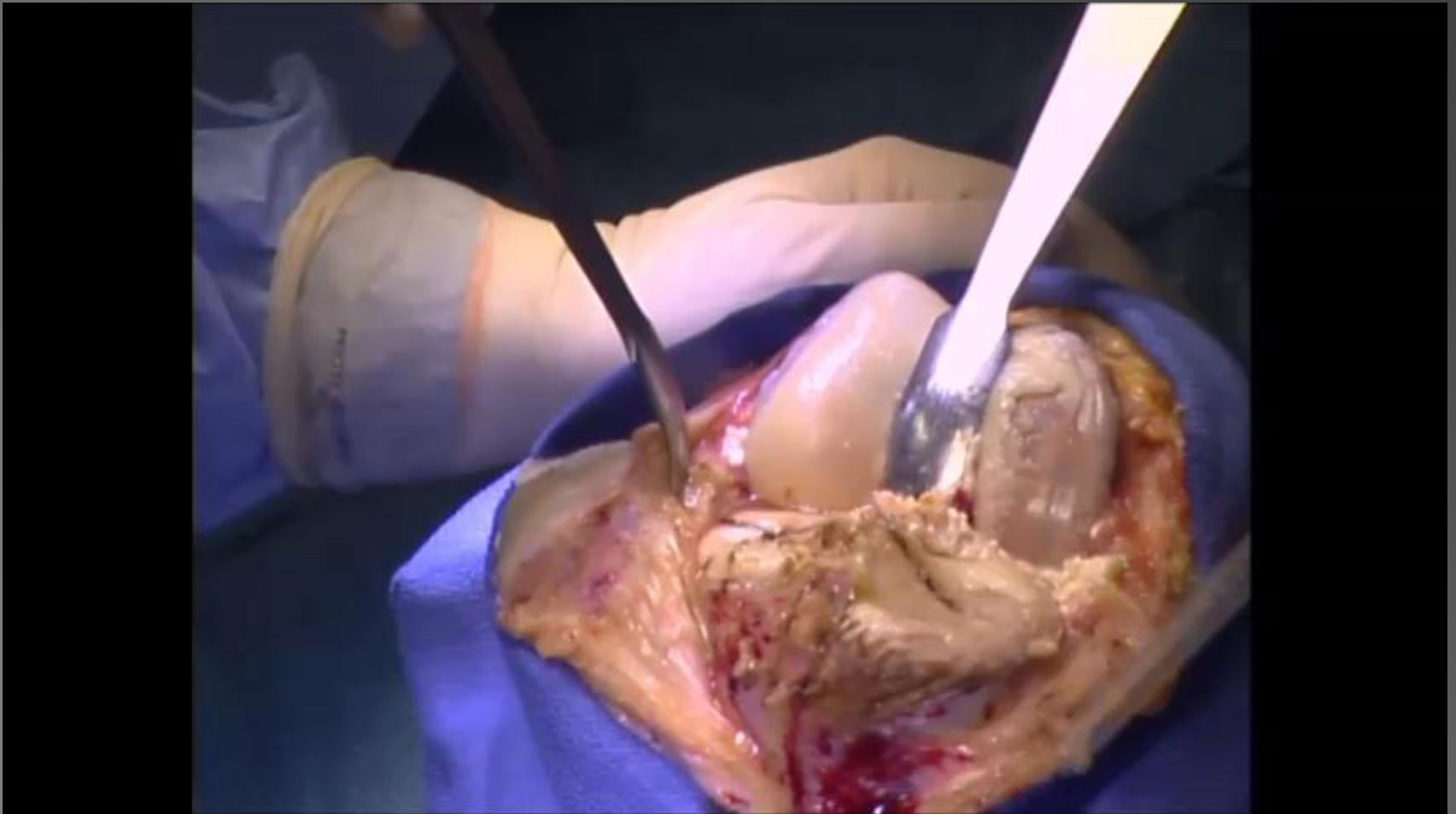
# Exposure



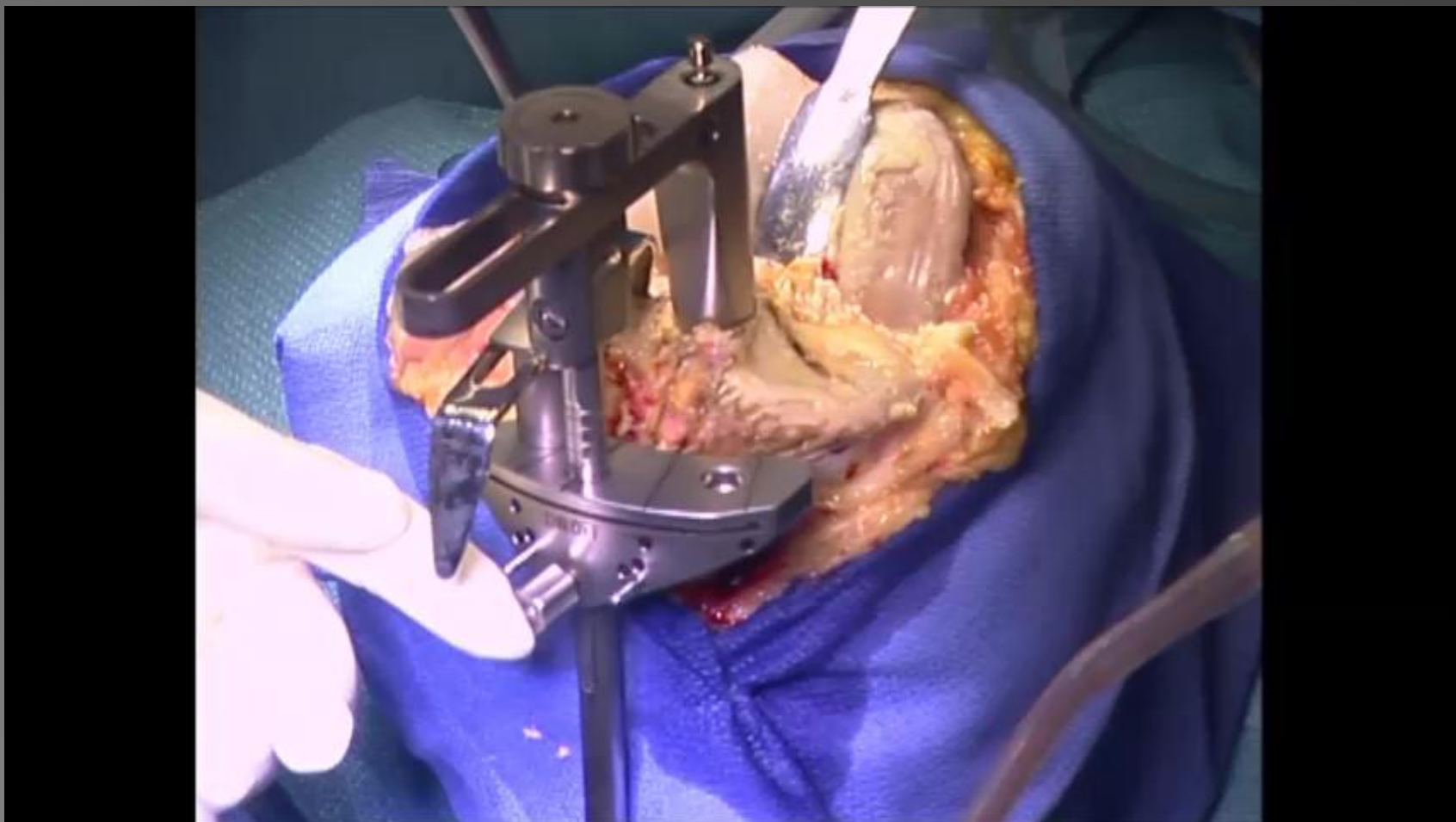
# Tibial cut



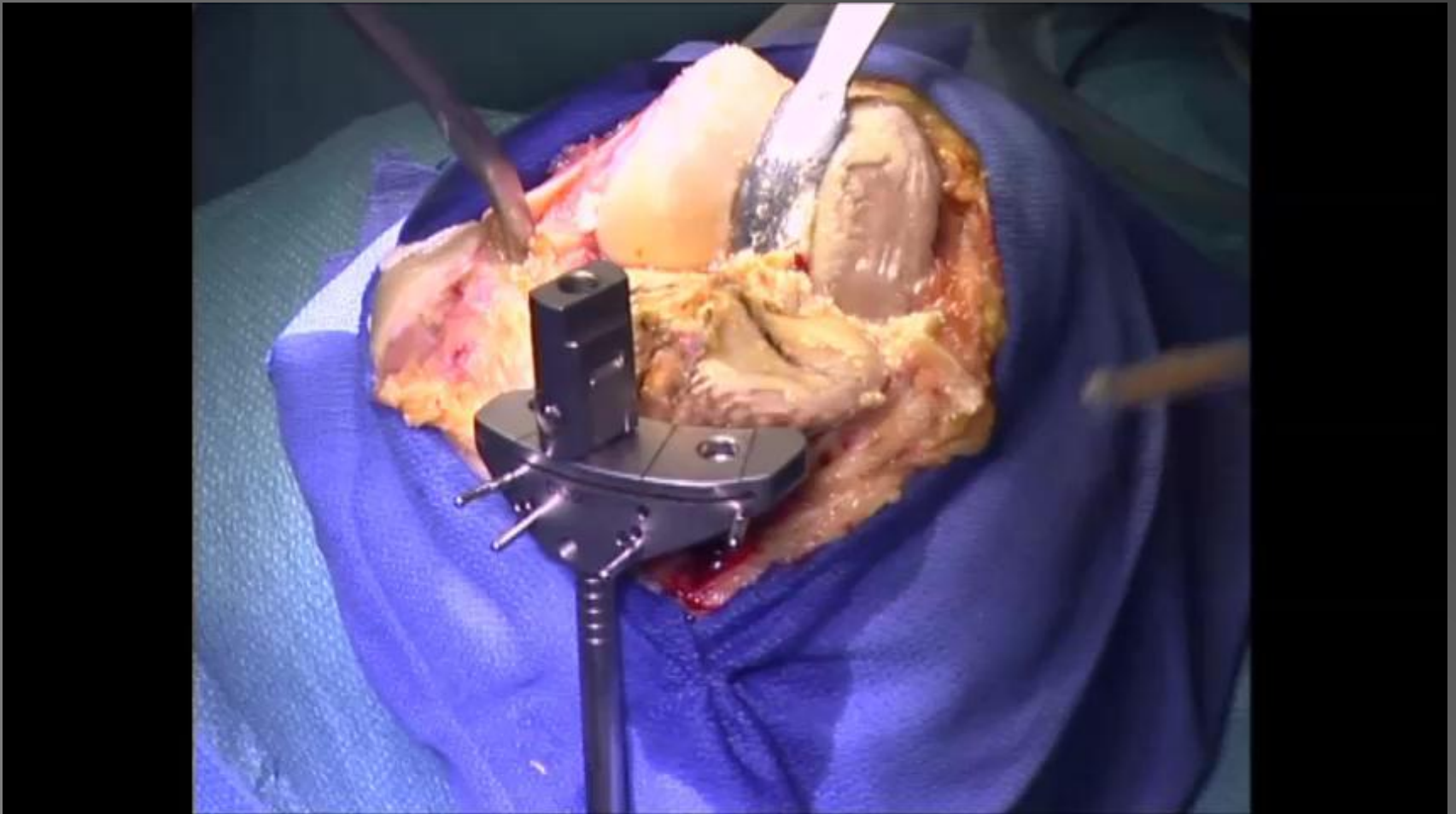
# Tibial cut



# Tibial cut

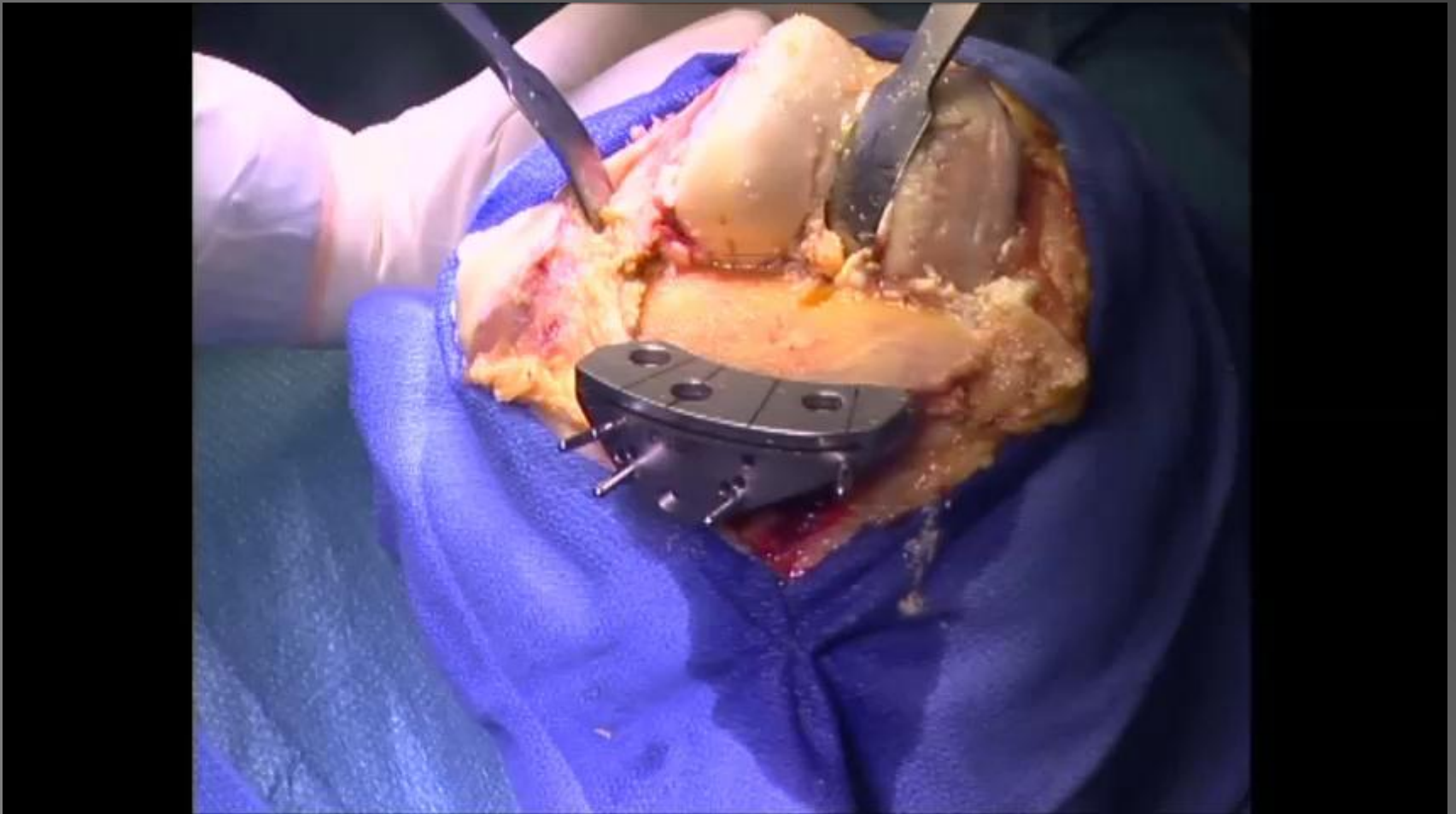


# Tibial cut





# Tibial cut



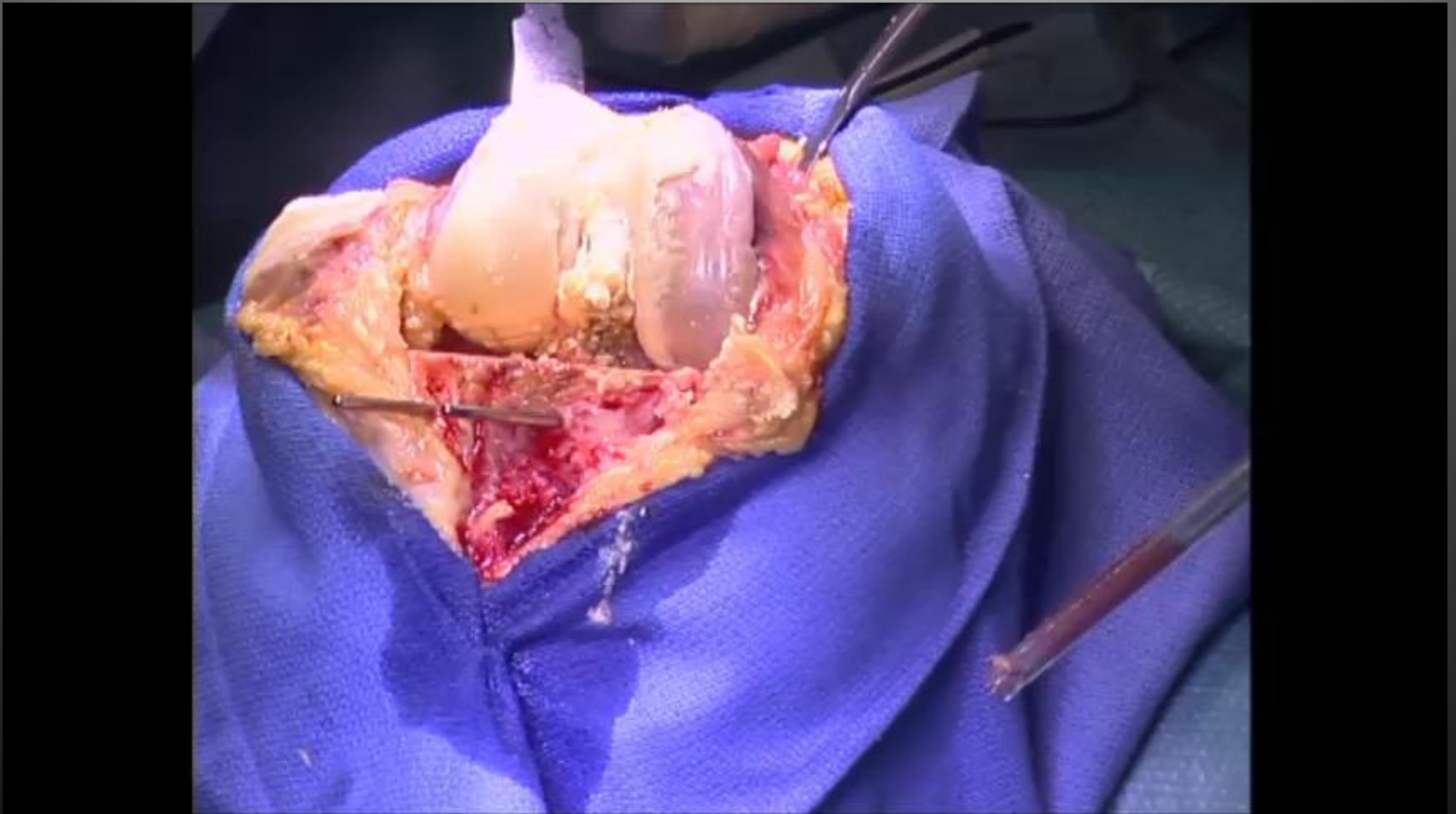


# Femoral cut

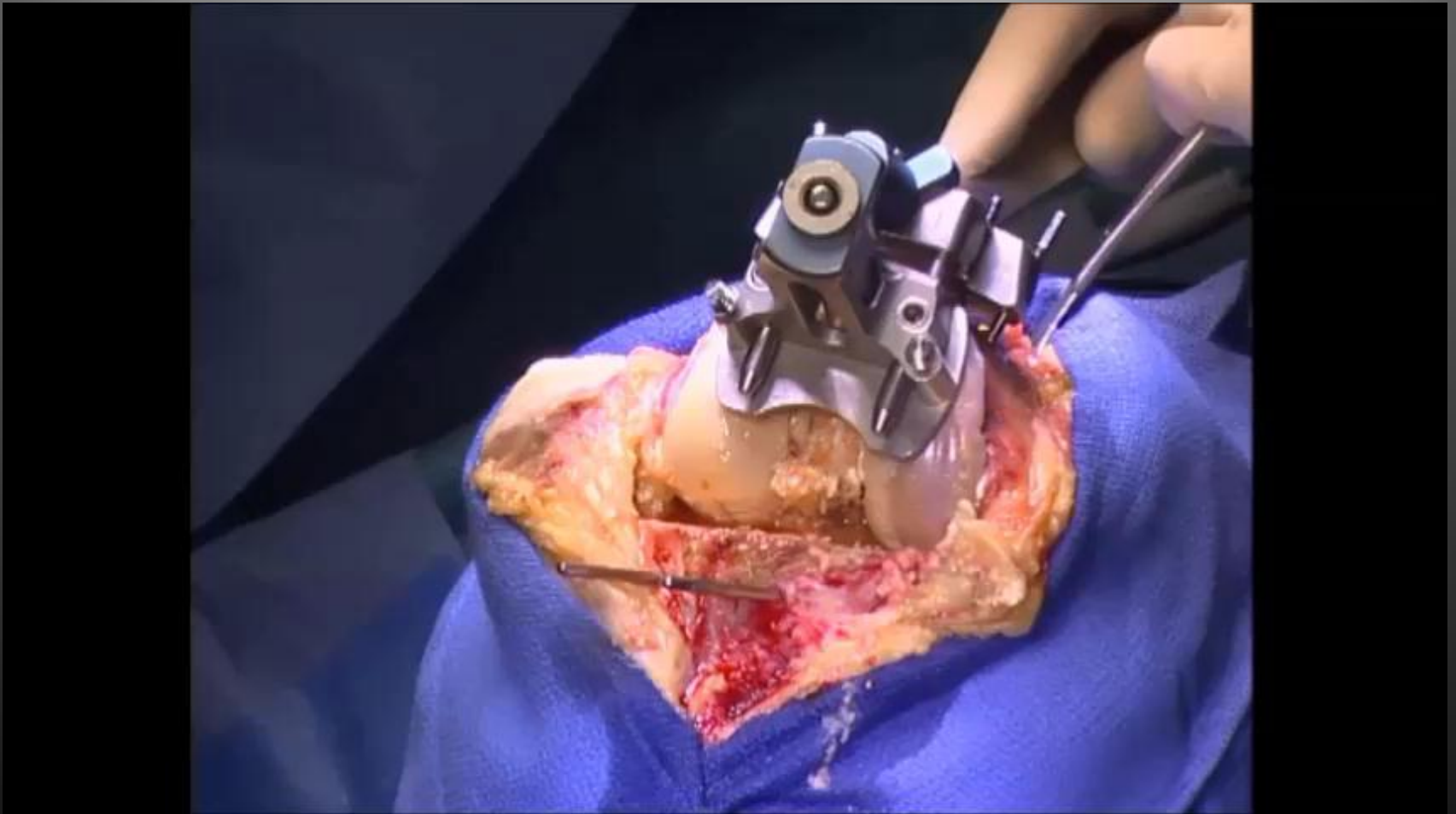


The Saône

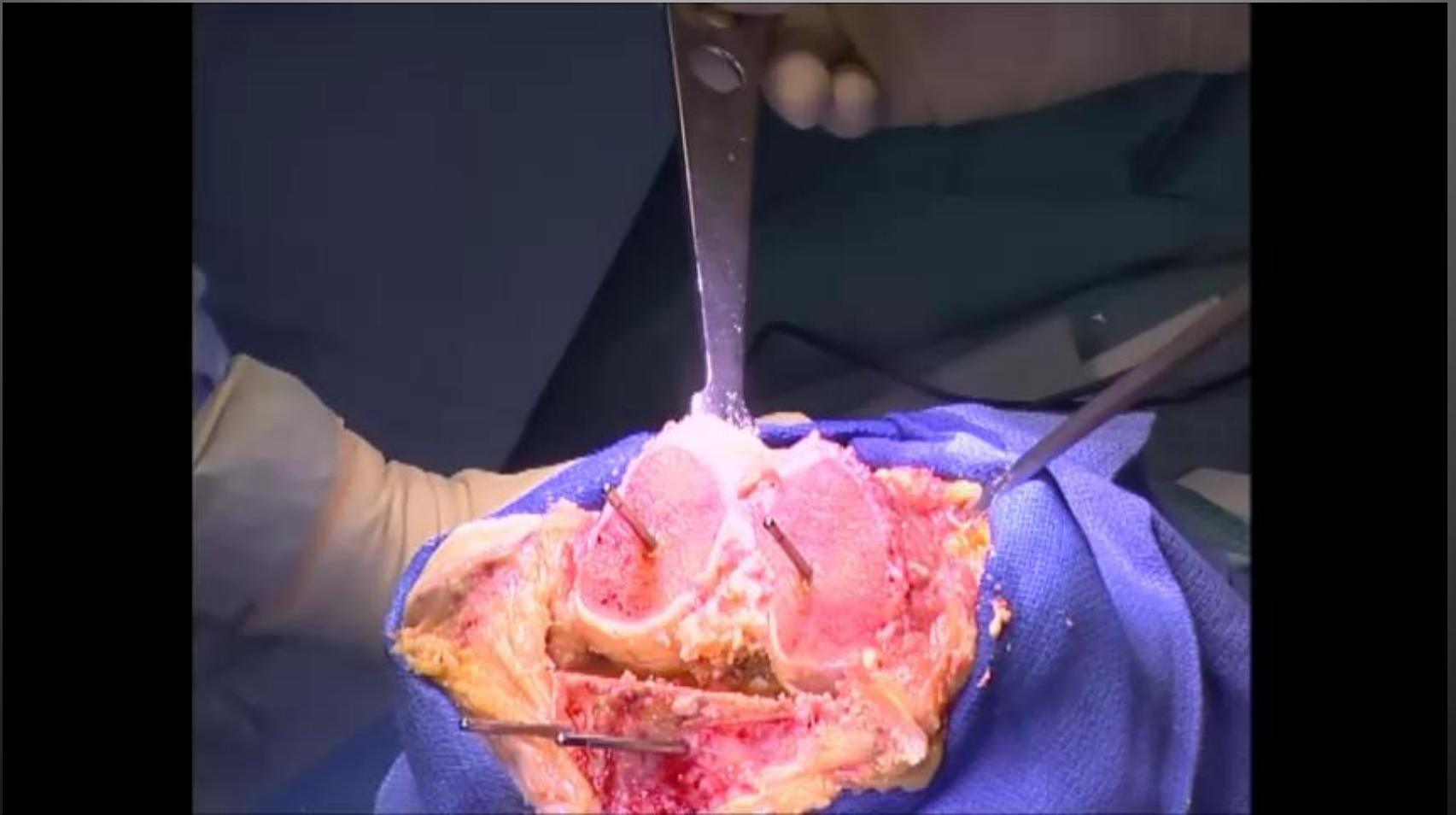
# Femoral cuts



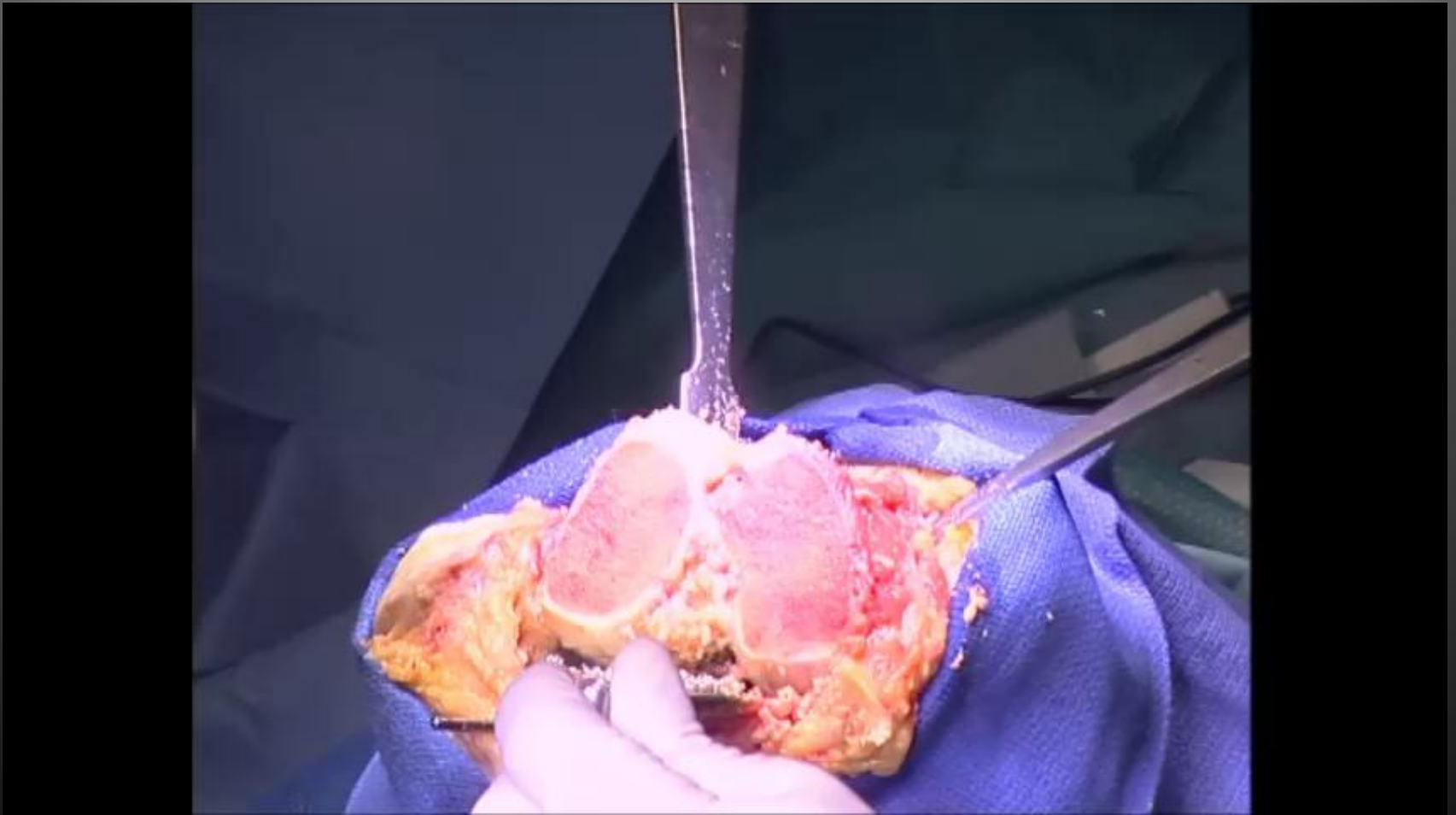
# Femoral cuts



# Femoral cuts

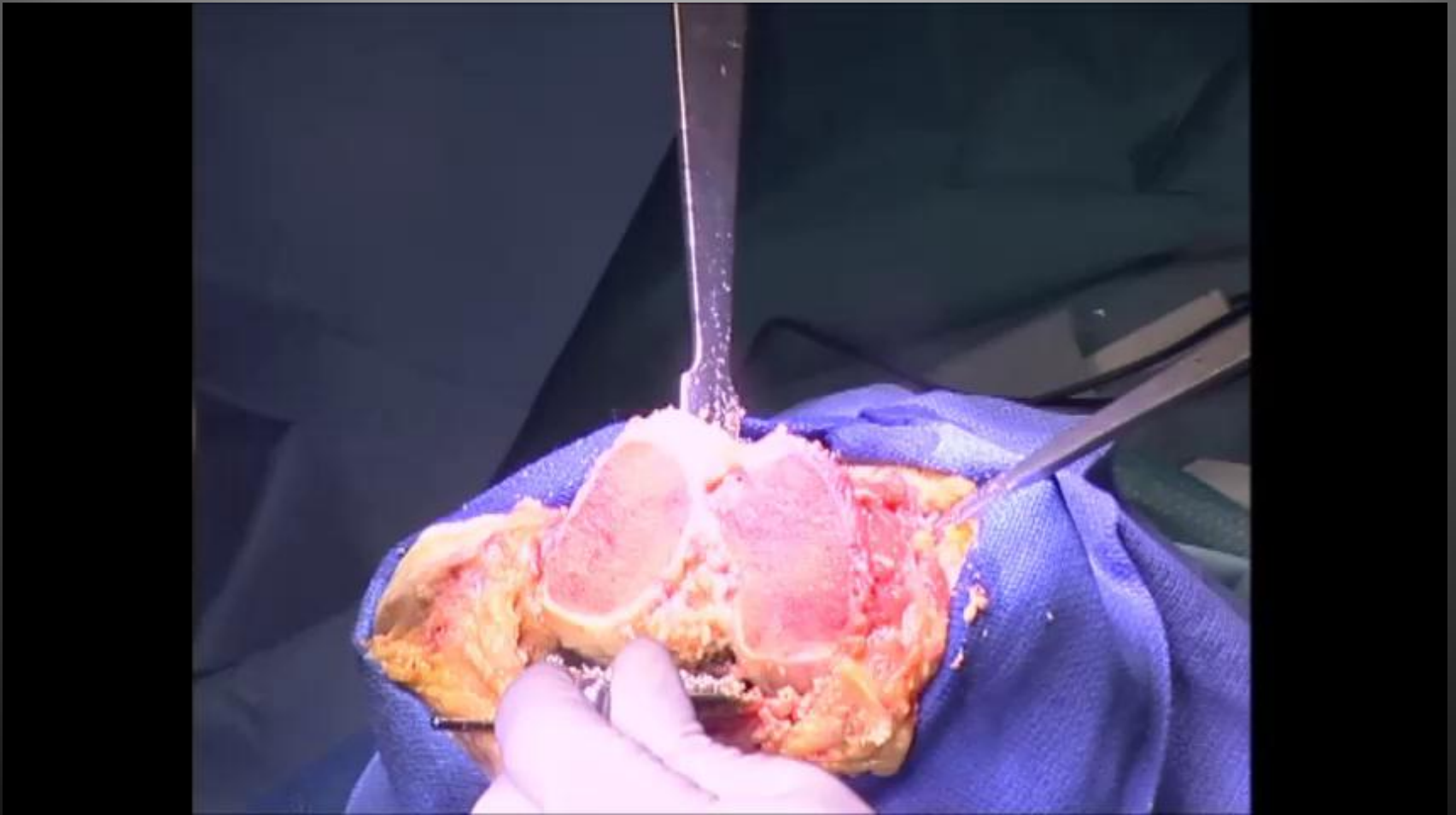


# Femoral cuts



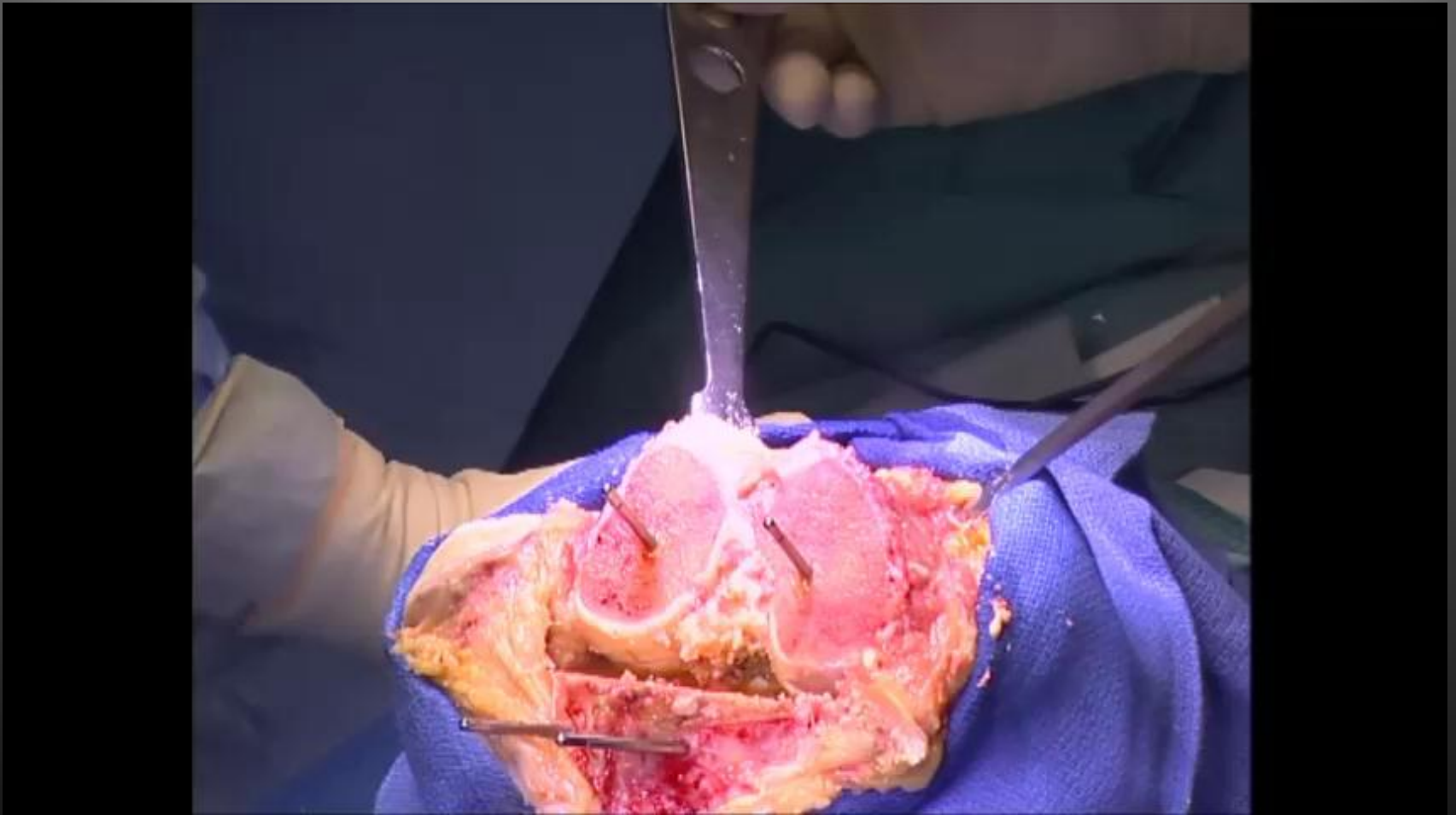


# Femoral cuts





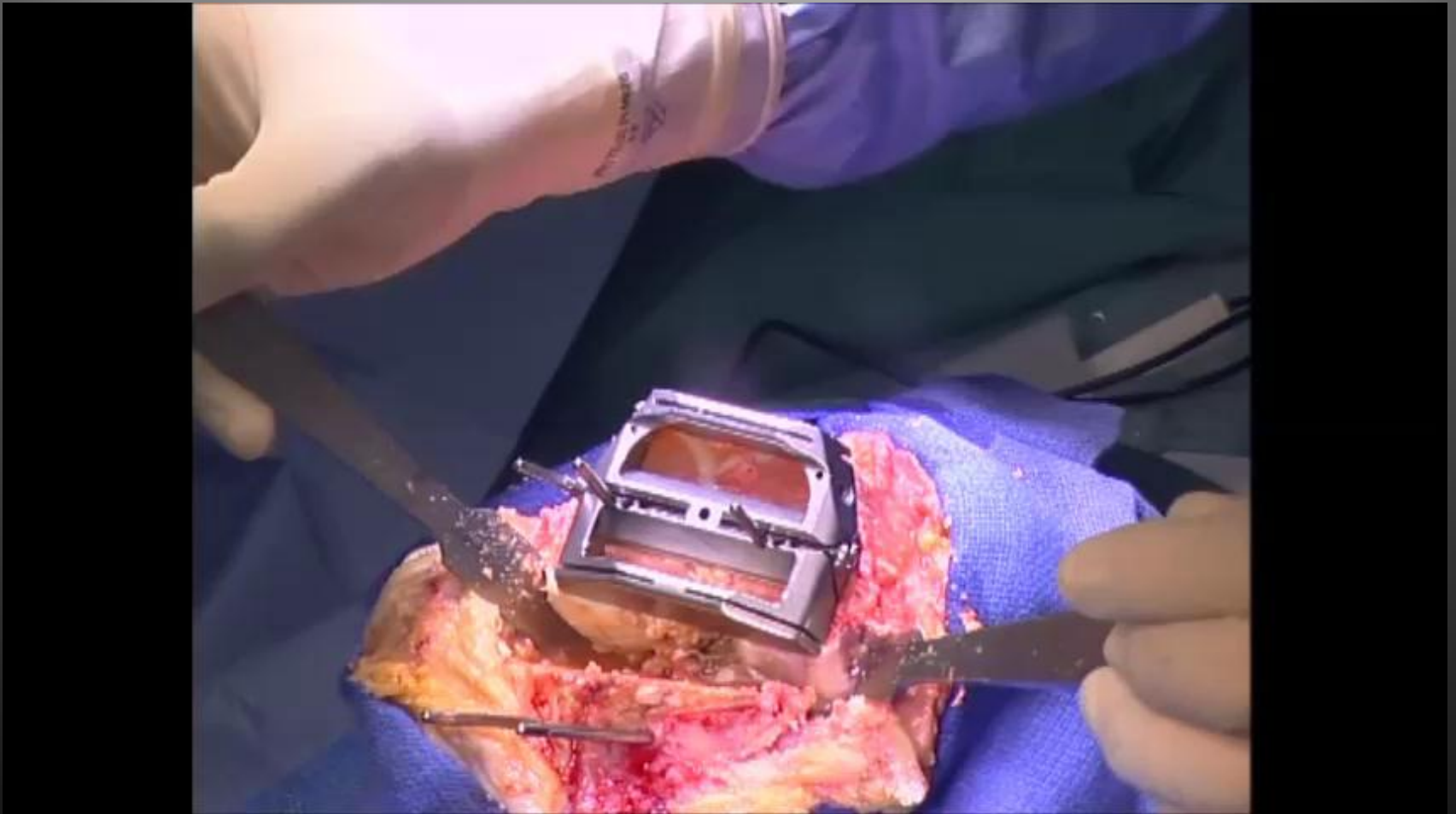
# Femoral cuts



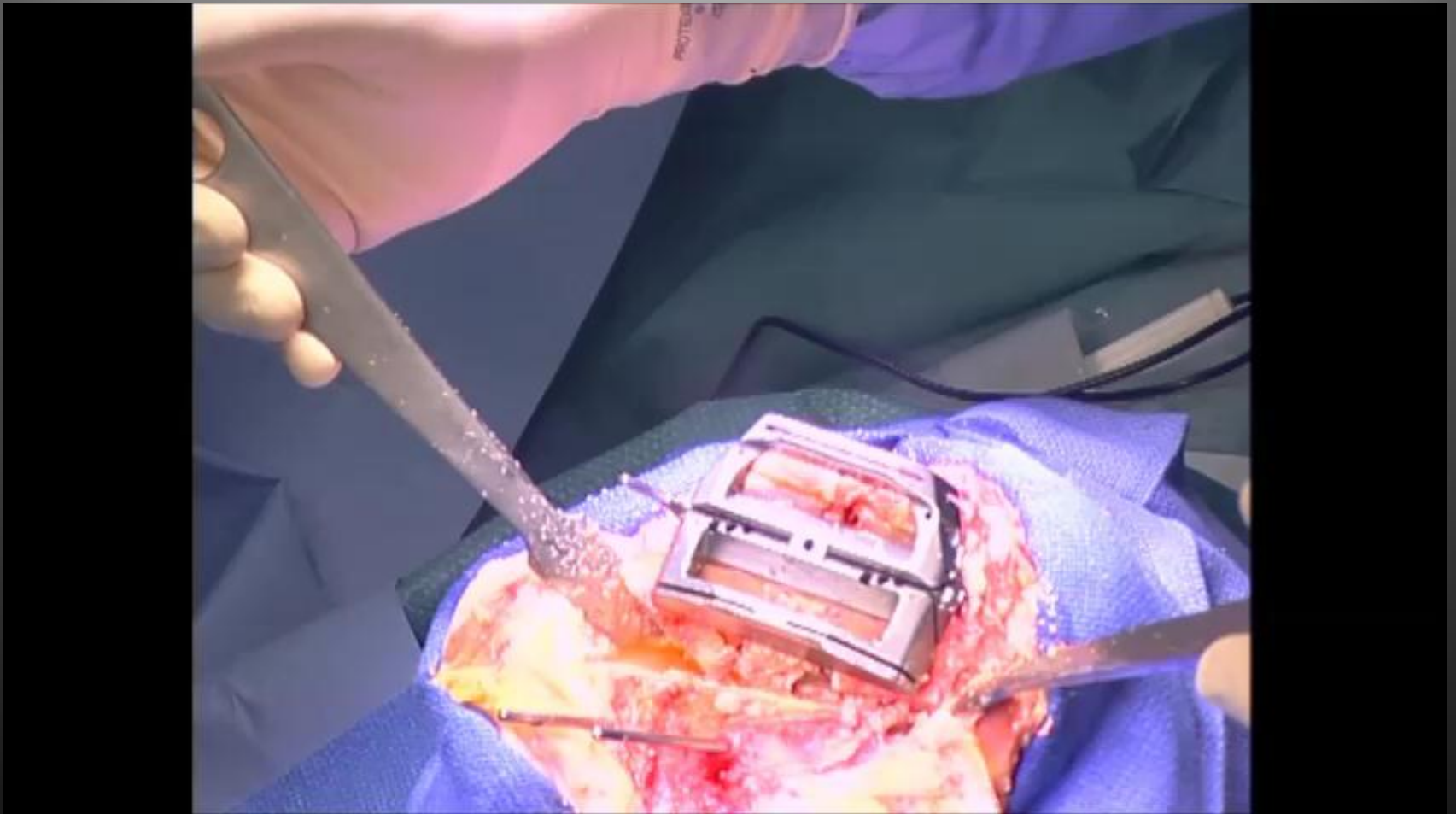
# Femoral cuts



# Femoral cuts



# Femoral cuts

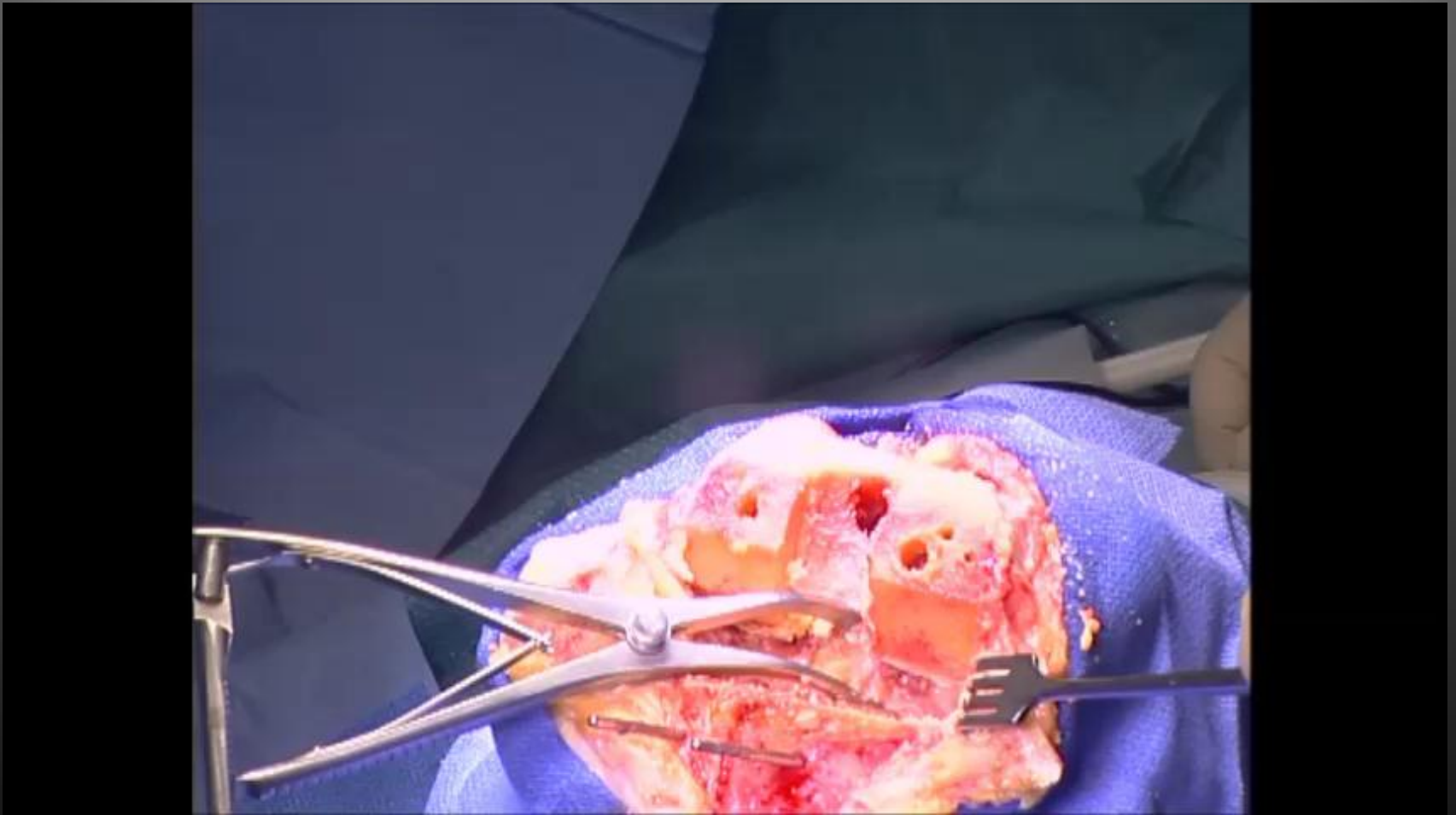




# Ligament Balancing



# Ligament balancing

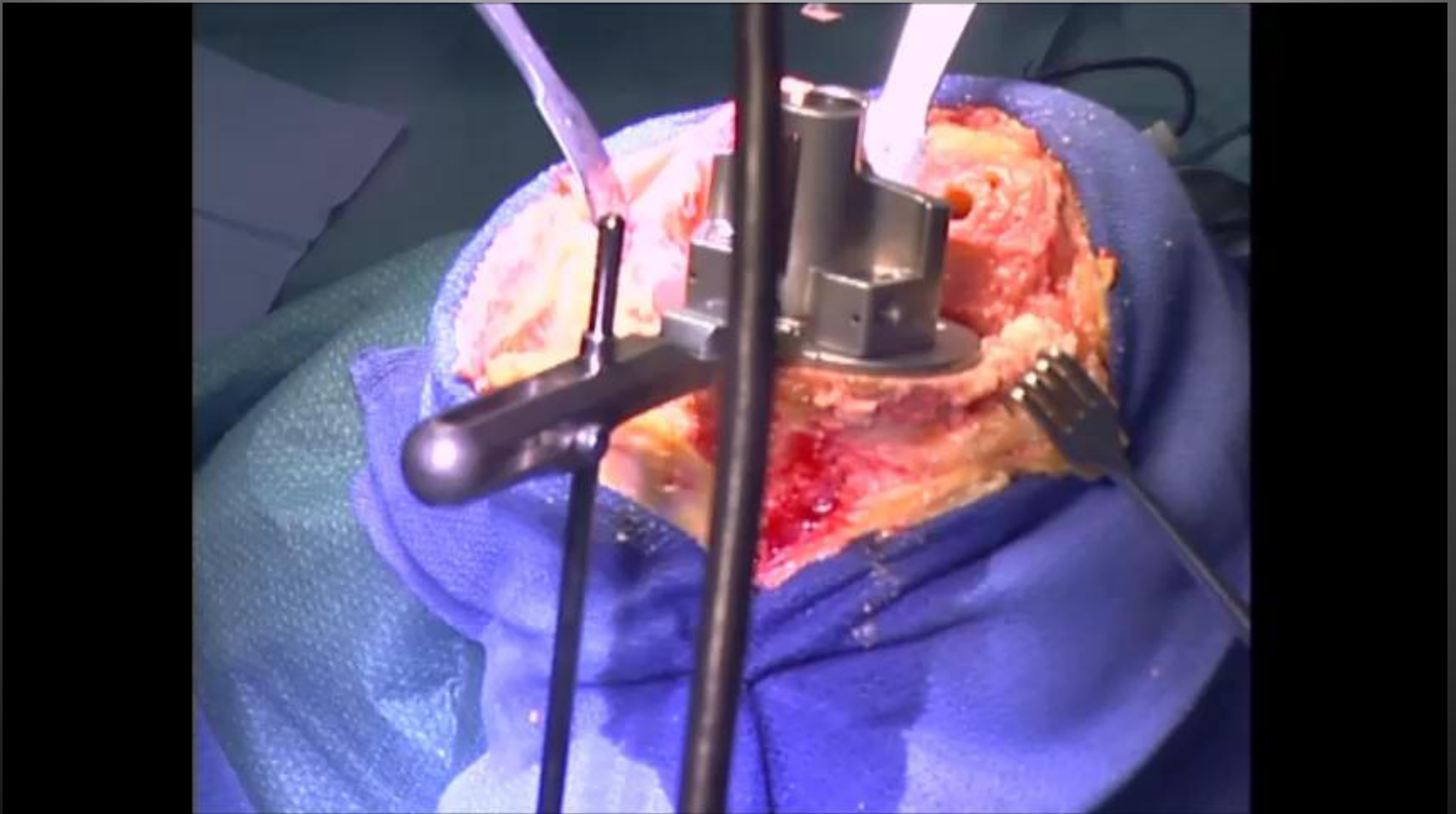




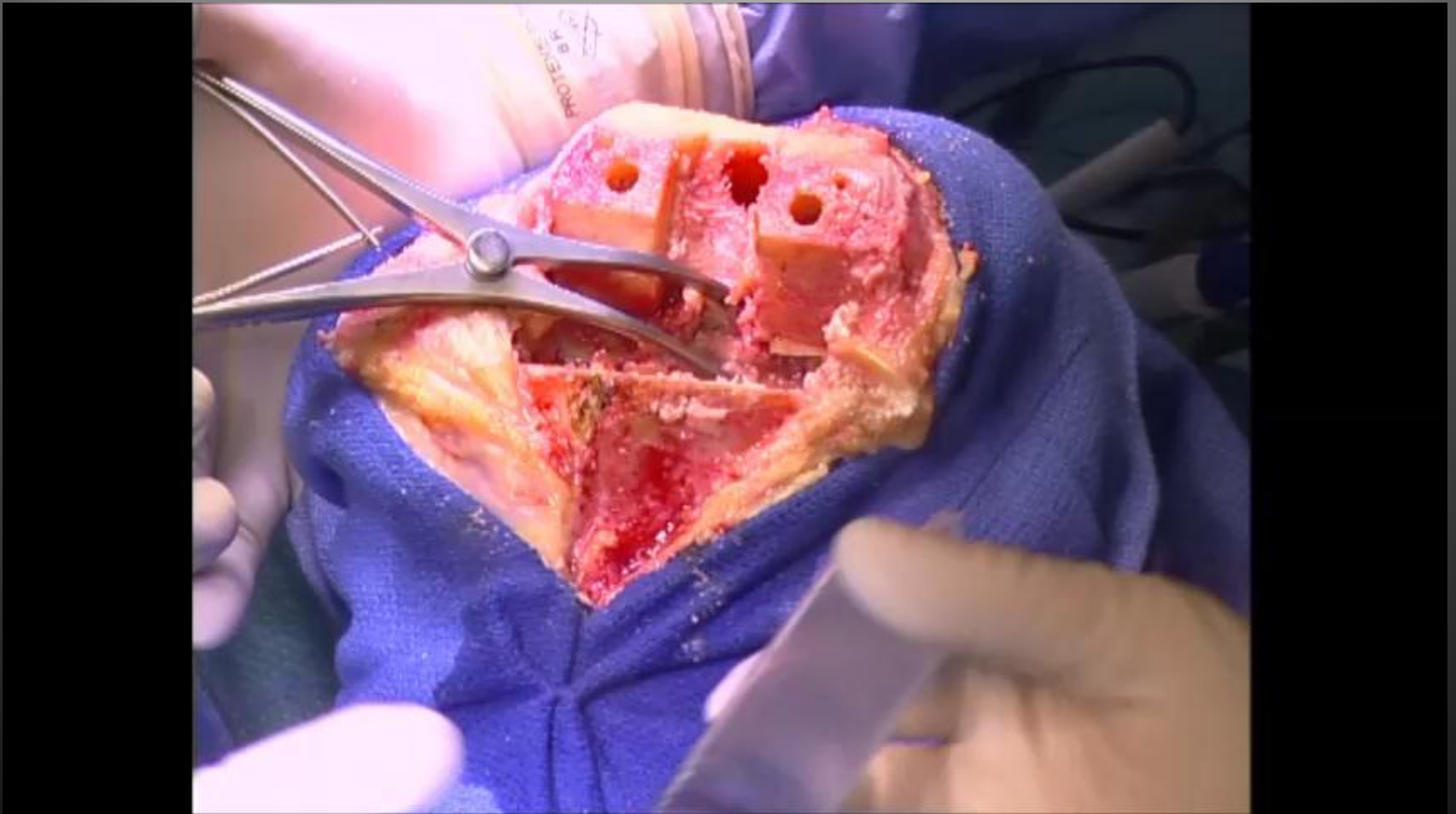
# Ligament balancing



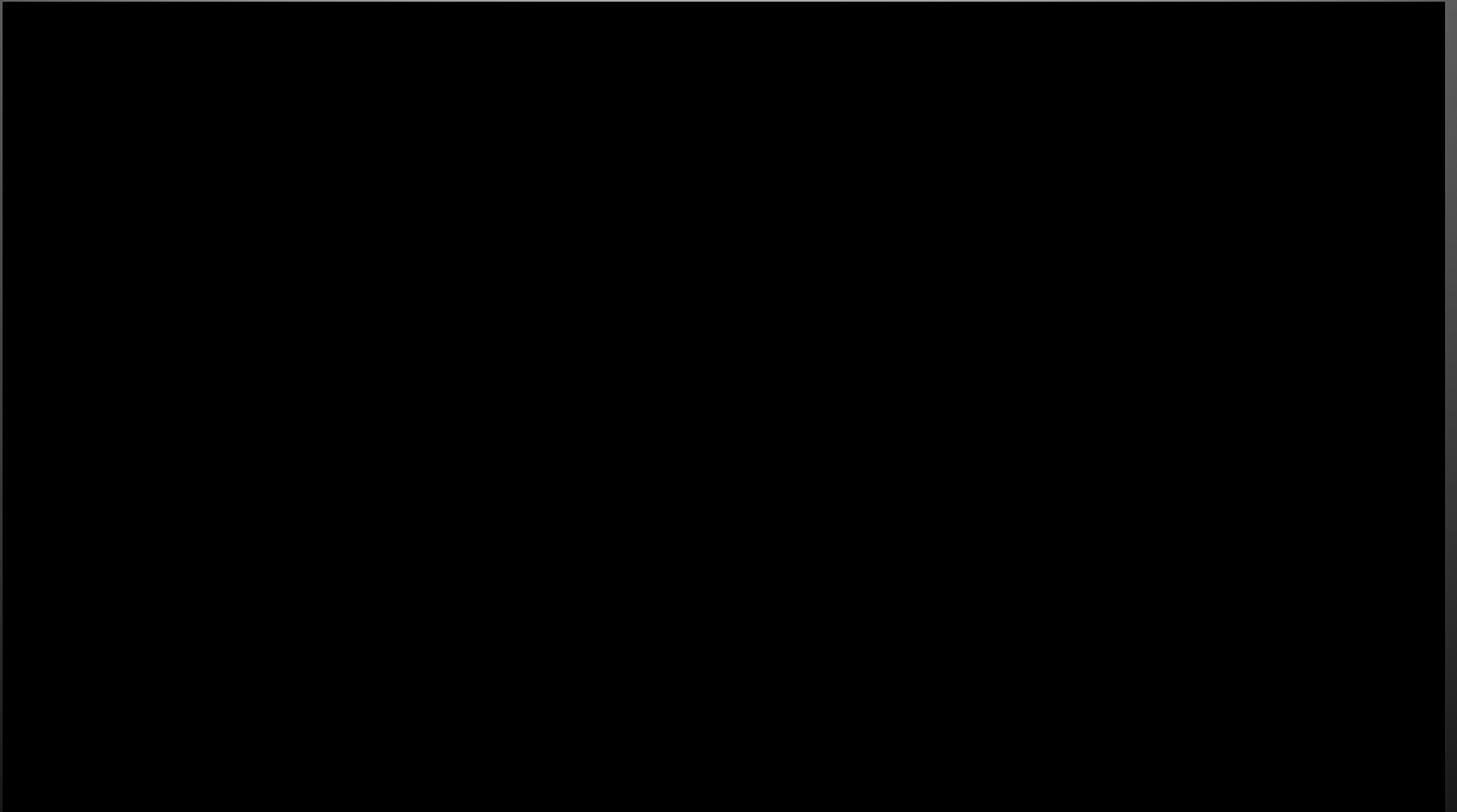
# Tibial preparation



# Local infiltrations



# Patella



# Implants fixation



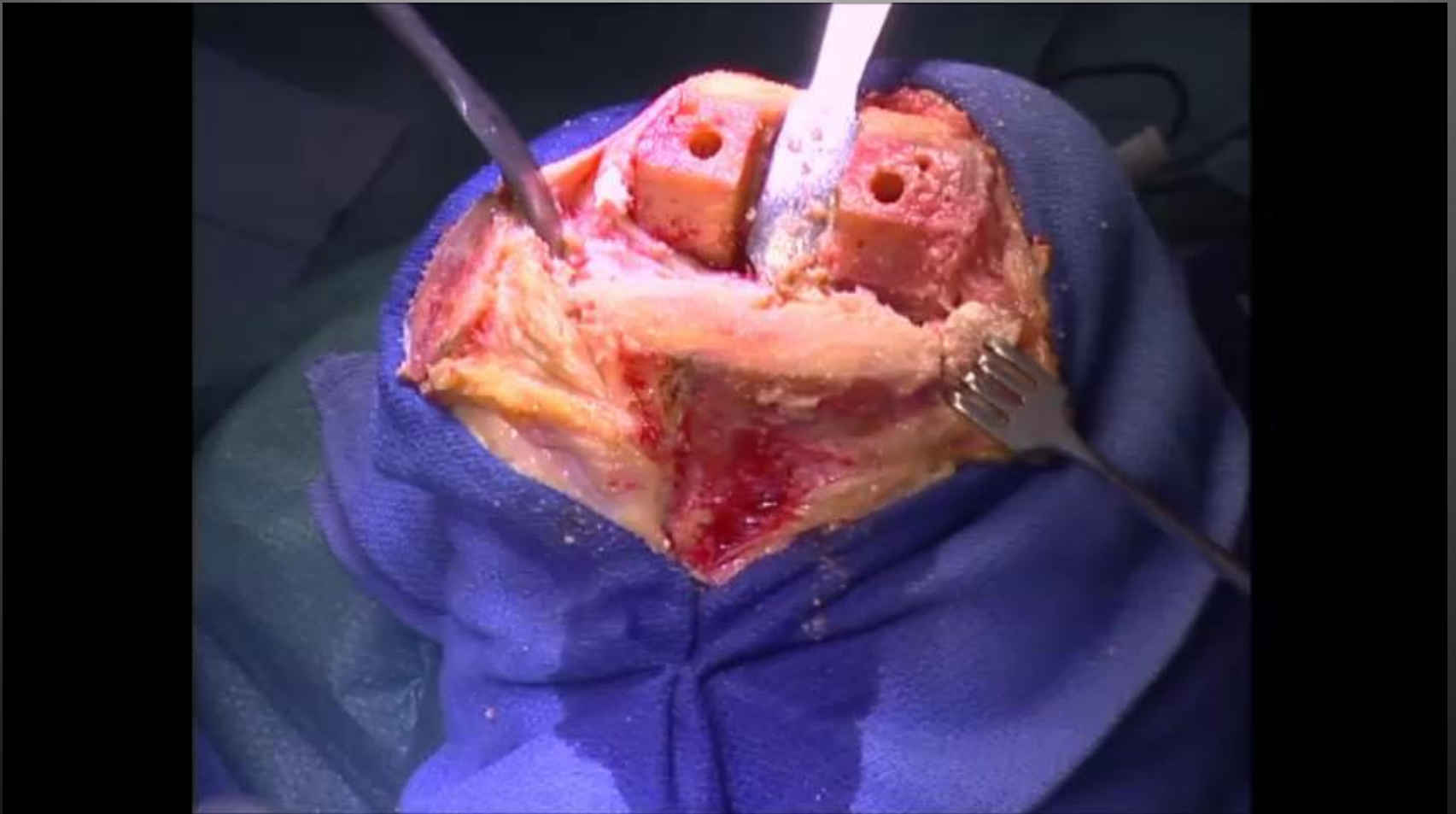


# Implant fixation

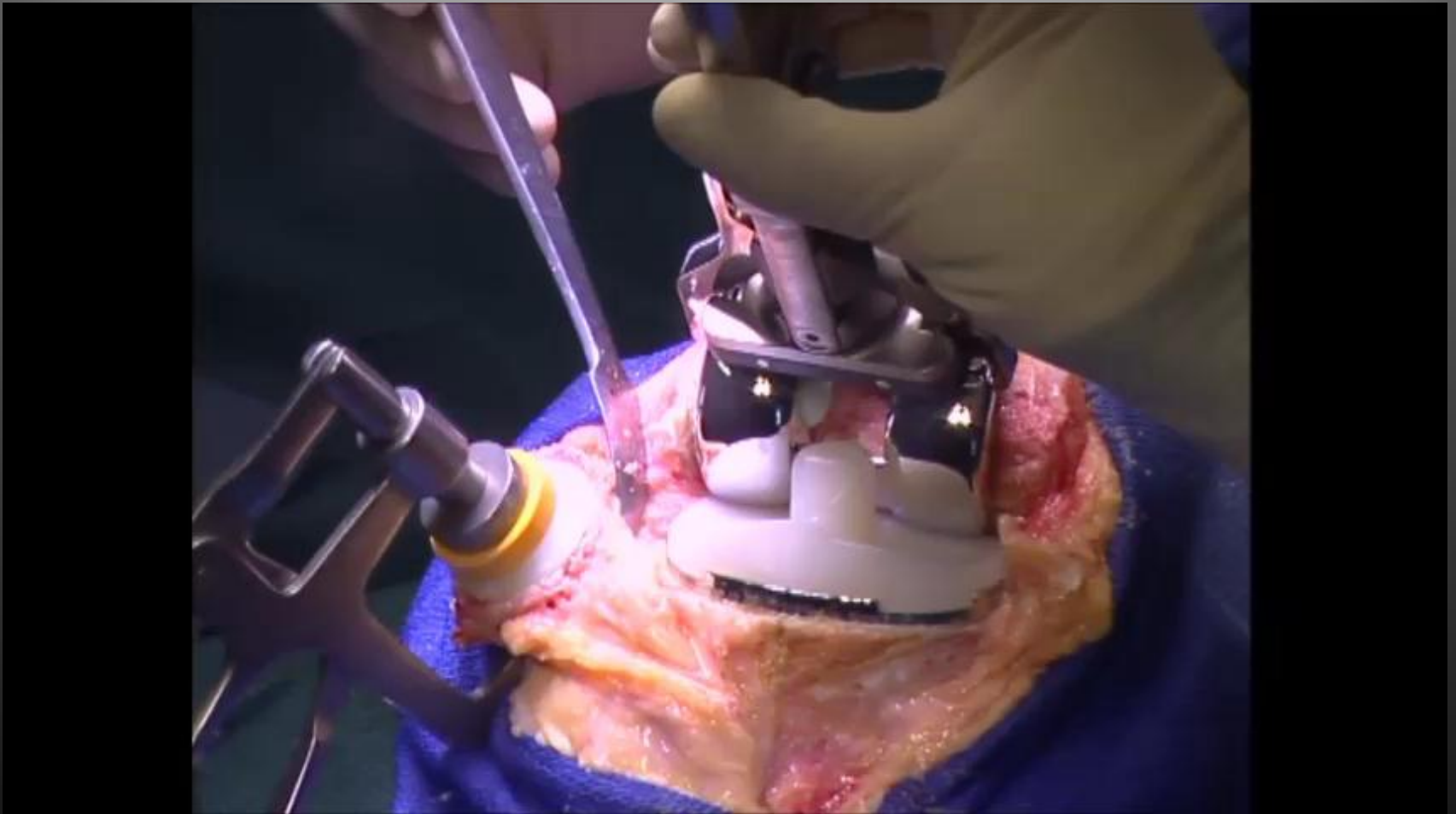




# Implant fixation

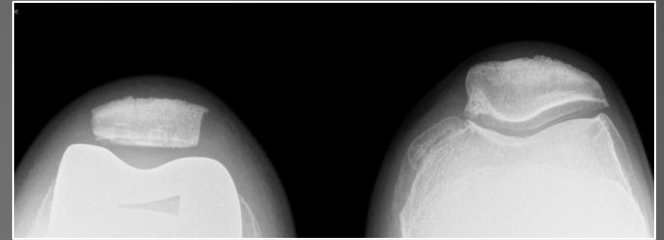


# Implant fixation



# Closure









# Indications

In primary

MFTOA

**Varus knee**

**2837**

Preop mAFT : 171.9  
Postop mAFT : 179.0

**Pie crust  
of the MCL**

**1251**

**31.0%**

**Tibial release  
of the MCL**

**98**

**2.5%**

**HTO+TKA**

**16**

**0.4%**

**07/2015**



Knee joint



frontal



# Diagnostic radiological check-up

## Comparative

AP monopodal stance  $0^{\circ}$

Lateral monopodal  $30^{\circ}$

Axial View  $30^{\circ}$

PA Bipodal  $45^{\circ}$



## Pre-operative radiological check-up

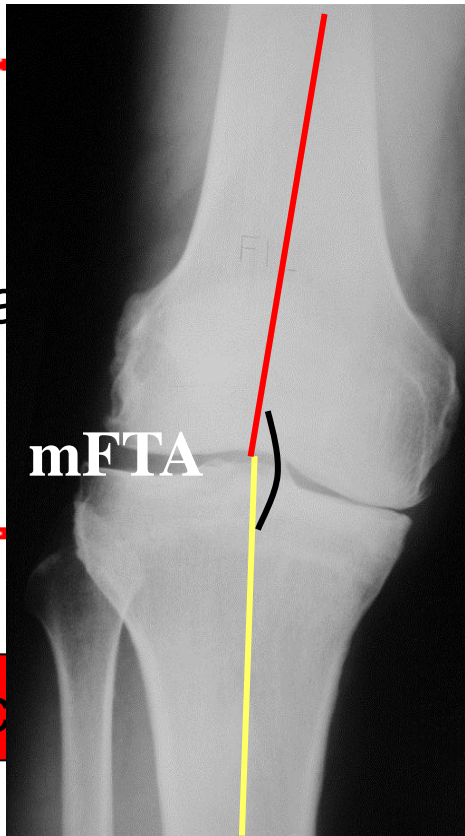
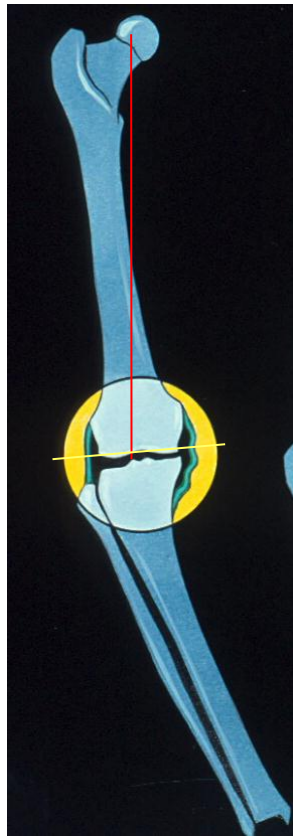
Long leg films

Varus and valgus stress

CT Scan sometimes

# Analysis of the deformity, and its reducibility

- HKA film: mechanical Femoro-Tibial Angle



Release

Release



# Varus deformity

A large, stylized yellow letter 'F' with a black outline, positioned on a purple background.

Knee  
joint

A large, stylized orange letter 'T' with a black outline, positioned on a purple background.

frontal

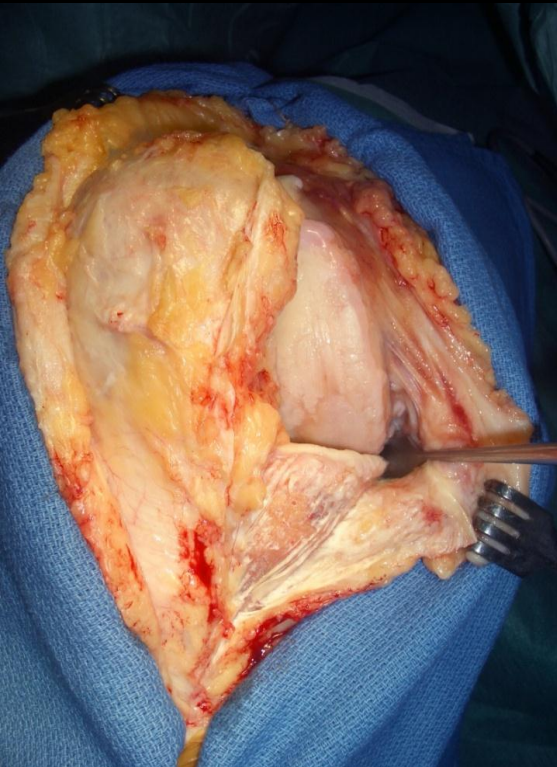


VERDONK.P, PERNIN.J, PINAROLI.A, Ait SI SELMI.T,  
NEYRET.Ph

Soft tissue balancing in varus total knee arthroplasty: an  
algorithmic approach

KSSTA (2009) June- Volume17-Number6-A42720: 660-666

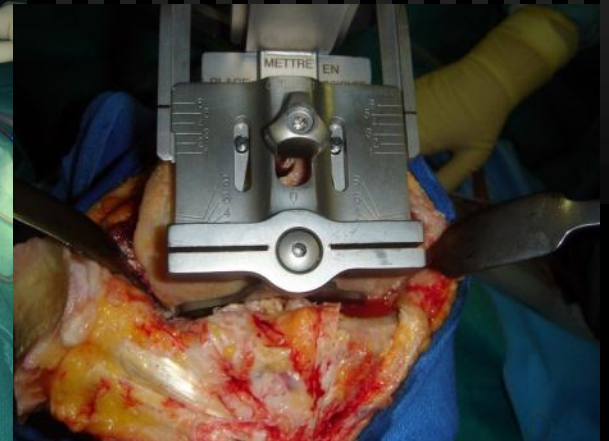
# STEP 1



For all varus knees

# STEP 2

- Tibial cut first perpendicular to mechanical axis
- Posterior femoral cut
  - posterior condyle reference
  - external rotation depending on distal offset





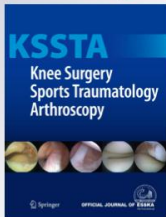


*The anterolateral ligament of the human knee: an anatomic and histologic study*

*Jean-Philippe Vincent, Robert A. Magnussen, Ferittu Gezmez, Arnaud Uguen, Matthias Jacobi, Florent Weppe, Ma'ad F. Al-Saati, Sébastien Lustig, et al.*

Knee Surgery, Sports Traumatology, Arthroscopy

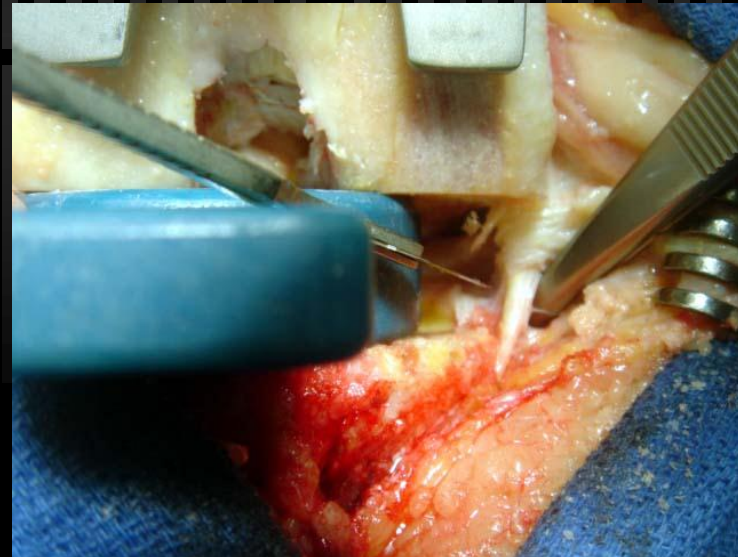
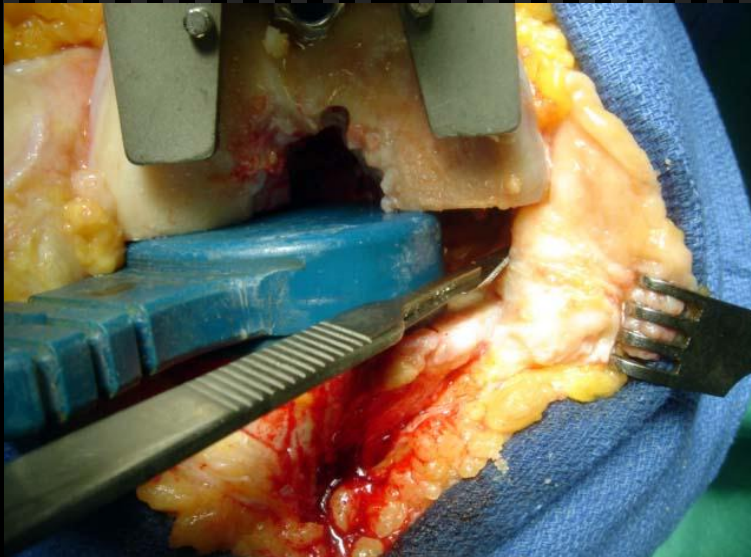
ISSN 1098-0158  
Knee Surg Sports Traumatol Arthrosc  
CODEN JSPTDH  
0021-9711-1803



Springer

# OPTION 1

- **Pie Crust of the superficial MCL** at the joint line level. Only the tightest fibres of the MCL are addressed from the inside in flexion (**anterior**) and in extension (**posterior**) using an 11 blade

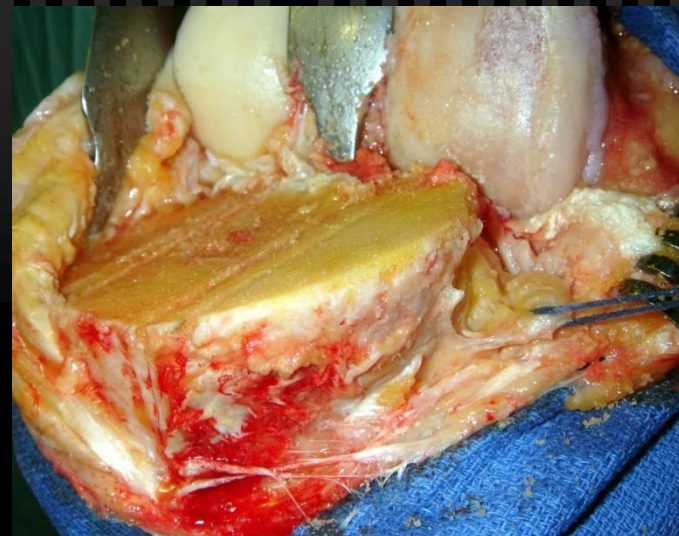
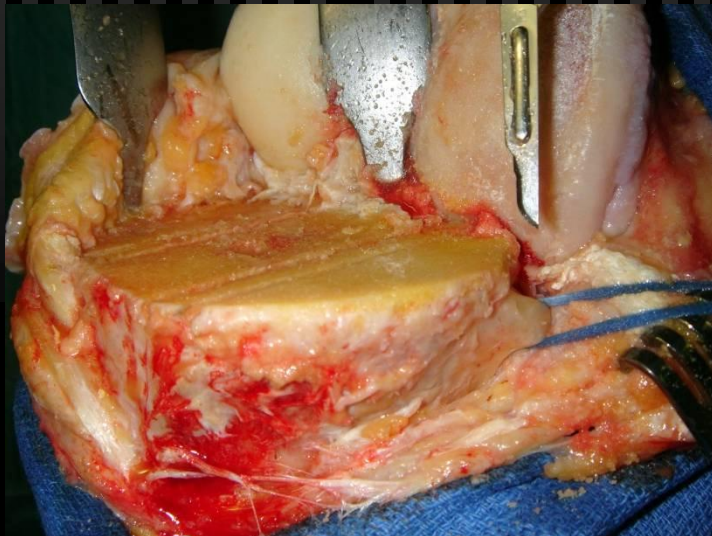


For moderate varus knees



# OPTION 1bis

- Pie Crust of the superficial MCL at the joint line level
  - address selectively the posterior (extension) or anterior (flexion) fibers of the superficial MCL
- **+ release Semi-Membranosus**

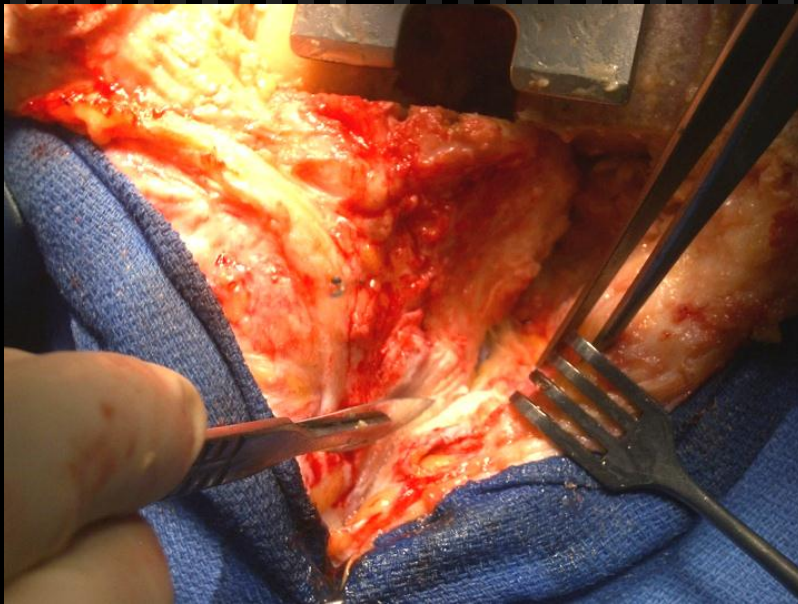


For moderate varus knees + flexion contracture



# OPTION 2

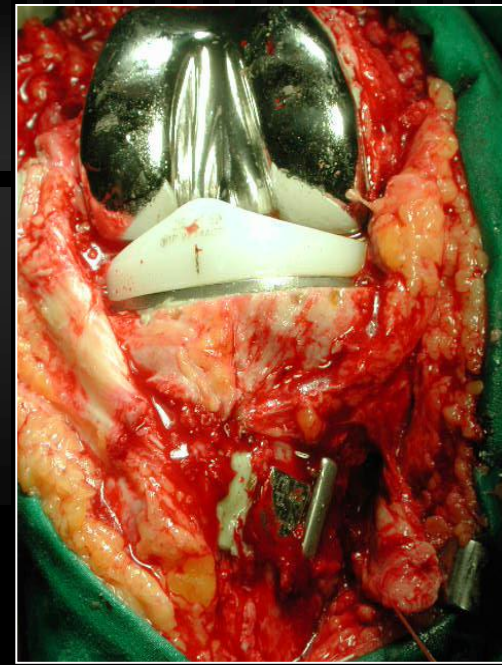
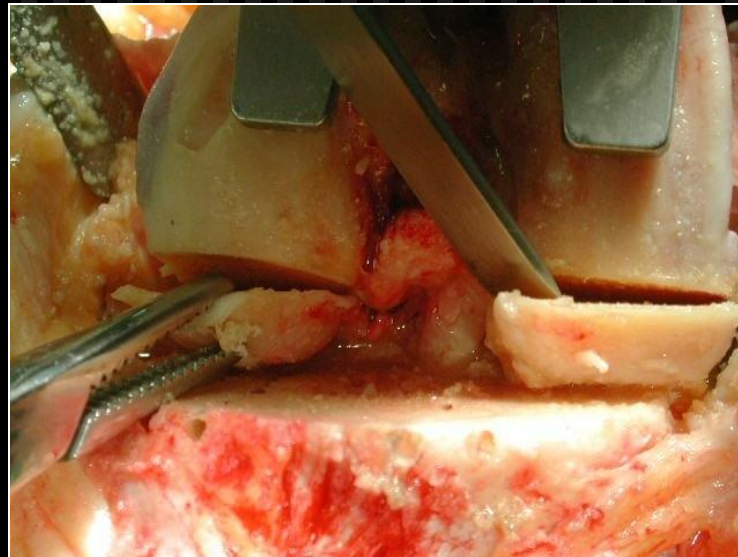
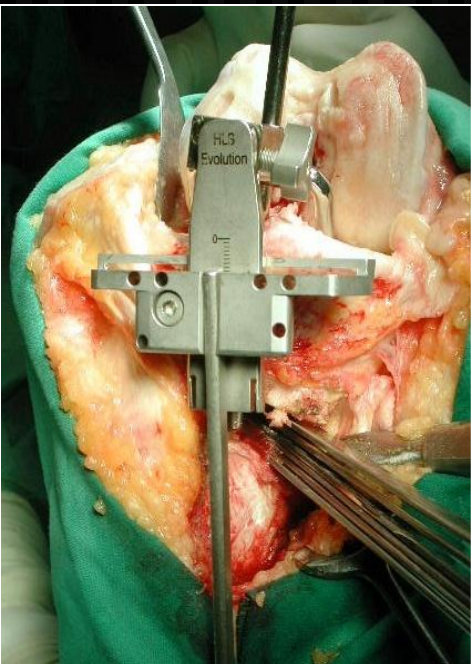
- Release of the superficial MCL on the distal tibia + release Semi-Membranosus



For severe varus knees

# OPTION 3

- Opening wedge HTO +TKA



For severe varus malunion

Since 1988, **3294 medial approaches**  
including 21 ATT osteotomies

Capsule + LLI (pie-crust)	<b>1097</b>	<b>33.3%</b>
Capsule + 1/2 M	328	9.9%
Capsule + 1/2 M+ MCL( pie-crust)	<b>164</b>	<b>4.9%</b>
Capsule + Tibial MCL + ...	98	2.9%
TKA+ Osteotomy	16	0.4%

# Since 1988, 3666 primary TKA

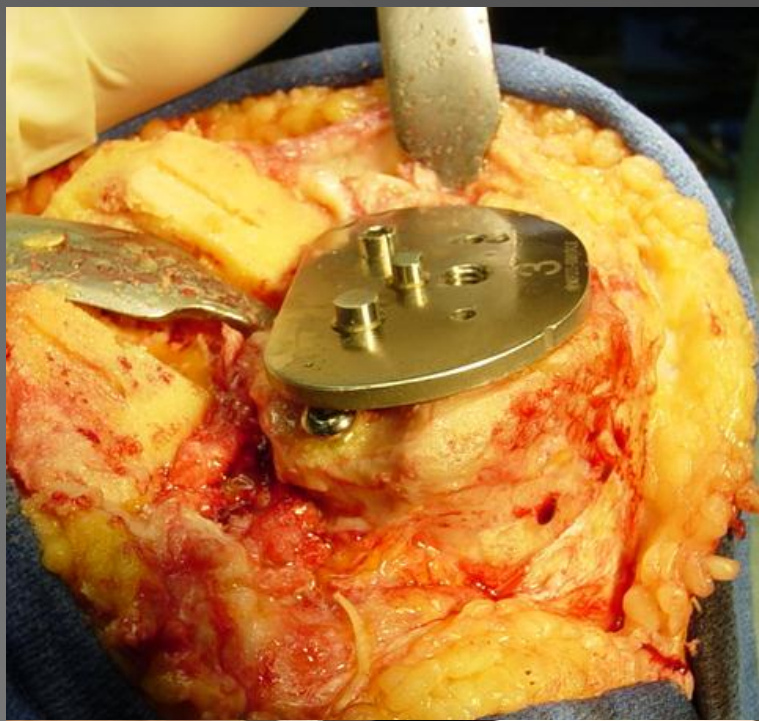
## Tibia

Long stem	11.9%
Medial screw(s)	1.2%
Medial augment	0.4%

## Femur

Long stem	0.3%
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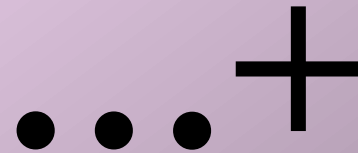




# Varus knee

## Literature

### Medial approach



- **Whiteside (Corr 2000)**

Selective release Posterior fibers → Extension  
Anterior fibers → Flexion

- **Engh (Corr 1999)**

Medial epicondyle osteotomy

# Varus deformity

F

Extra articular

Knee  
joint

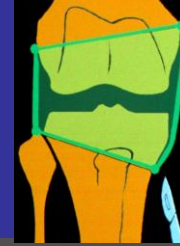


frontal

Flexion



GAPS



Extension

Femoral GAP

Tibial GAP

2008

TECHNIQUES CHIRURGICALES  
orthopédie-  
traumatologie  
DE L'ADULTE

# Chirurgie du genou

*My Knee Practice*



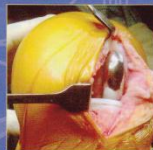
Philippe Neyret  
Peter Verdonk  
Tarik Aït Si Selmi



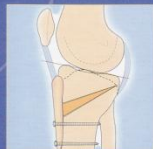
MASSON

# Χειρουργική του γόνατος

*Χειρουργική  
εμπειρία*



Philippe Neyret  
Peter Verdonk  
Tarik Aït Si Selmi



Επιμέλεια Ελληνικής Έκδοσης  
Ευσταθόπουλος Νικόλαος

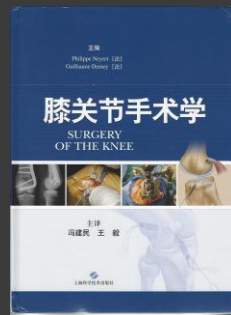
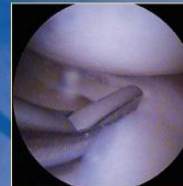
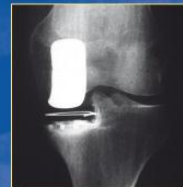
ΕΠΕΡΜΕΤΑΦΡΑΣΗ ΚΑΙ ΕΚΔΟΣΗ  
ΠΑΡΙΣΙΑΝΟΥ & Α.Ε.

TECHNIQUES CHIRURGICALES  
orthopédie-  
traumatologie  
DE L'ADULTE

# Traité de chirurgie du genou

2012

Philippe Neyret,  
Guillaume Demey  
Elvire Servien,  
Sébastien Lustig



2016



# Chirurgia kolana

Philippe Neyret  
Peter Verdonk  
Tarik Aït Si Selmi

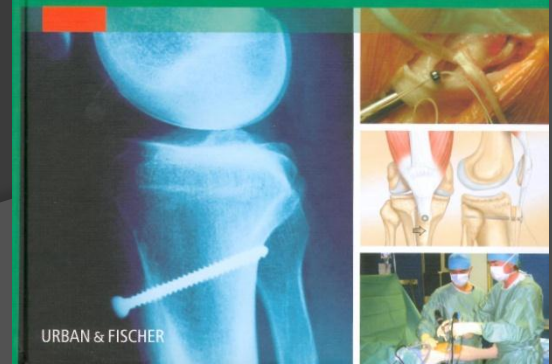


Redakcja wydania I polskiego  
Tadeusz Szymon Gaździk



P. Neyret P. Verdonk T. A. Si Selmi (Hrsg.)

# Kniechirurgie



URBAN & FISCHER





Merci

